dehydrogenase activity, and this organism naturally possesses NADP-linked glutamate dehydrogenase activity. The transformed organism therefore possesses a dehydrogenase pair according to the first embodiment of the invention that can convert NADP plus NADH into NAD plus NADPH. Unlike some bacteria, *Corynebacterium glutamicum* does not contain NADP/NADH transhydrogenase, so the sequential operation of the two glutamate dehydrogenases provides the bacterium with the novel means to equilibrate the NAD/NADH amd NADP/NADPH coenzyme couples. It is well known that the synthesis of lysine (and most other amino acids) produces NADP, and when lysine is overproduced in large amounts the requirement for reduction of NADP to NADPH can limit amino acid production. It is also known under the cultivation conditions used in Example 23, production of lysine does not begin while threonine is still present in the medium and that yields are relatively low until the bacteria stops growing (Vallino, J.J. [1991]; see especially pages 207 to 213). Surprisingly, *Corynebacterium glutamicum* transformed according to the invention already produced large amounts of lysine while threonine was still present and before the bacterium had reached even 25% of the expected biomass yield. These examples disclose that the present invention can be practiced with advantage also in bacteria as well as fungi and for improving the production of

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amino acids as well as non-nitrogenous compounds such as ethanol and xylitol.--